REMARKS

In response to the Office Action mailed March 23, 2005, Applicants respectfully request reconsideration. To further the prosecution of this Application, Applicants submit the following remarks, and have added new claims. The claims as now presented are believed to be in allowable condition.

Claims 1-24 were pending in this Application. By this Amendment, claims 25-27 have been added. Accordingly, claims 1-27 are now pending in this Application. Claims 1, 20 and 22 are independent claims.

Allowed Claims

Claims 6-17, 21 and 24 were objected to as being dependent on a rejected base claim but were deemed allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Applicants expressly reserve the right to amend the claims as described above, and will decide whether to do so after Applicants receive a reply to Applicants' request for reconsideration of claims 1-5, 18-20 and 22-23.

Rejections under §102 and §103

Claims 1-5, 20, 22 and 23 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,832,119 (Miller). Claim 18 was rejected under 35 U.S.C. §103(a) as being unpatentable over Miller. Claim 19 was rejected under 35 U.S.C. §103(a) as being unpatentable over Miller in view of U.S. Patent No. 6,720,746 (Amann et al.).

Applicants respectfully traverse each of these rejections and request reconsideration. The claims 1-5, 18-20 and 22-23 are in allowable condition because they patentably distinguish over the cited references.

Miller discloses a method for compensating for torque ripple in pulse width modulated machines including providing damping for transient disturbances utilizing a fixed feedback controller and rejecting steady disturbances utilizing an adaptive controller (Abstract). In one embodiment, a hybrid control method

combines traditional fixed feedback control with adaptive feedback techniques (column 2, lines 48-50). Those of skill in the art at the time of the invention would understand that the term "torque ripple" refers to "the cyclical variation of generated torque caused by the product of motor angular velocity and number of commutation segments" (e.g., see the "Motion Control Handbook", O'Neil, Micro Mo Electronics, Inc., December, 1998). As such, torque ripple refers to a characteristic of continual motor rotation in the same direction. In this context, Miller further explains that the adaptive controller of the Miller technique differs from other control techniques in that a measurement of an external signal coherent with the disturbances is not needed, nor is a knowledge of how the disturbance enters the system (column 2, lines 54-57).

Amann discloses a method for damping torque oscillations of a drive train of an electrically driven road vehicle (Abstract). Again such a method appears to involve an apparatus with continual rotation in the same direction (e.g., see Fig. 1 of Amann).

Claims 1-5 and 18-19

Claim 1 is directed to a damped system for moving a load. The damped system includes an electric motor having damping means, a mechanical connection between the electric motor and the load, a transducer to sense an indicator related to load force or torque and produce a feedback signal, and a controller. The controller is connected to the electric motor and provides a motor control signal to move the load to a desired position, and is connected to the transducer for receiving the feedback signal and adjusting the motor control signal based on the feedback signal whereby disturbances to the position of the load are damped.

The cited references do not teach or suggest, either alone or in combination, a damped system for moving a load having a controller connected to an electric motor and "providing a motor control signal to move the load to a desired position", as recited in claim 1. Rather, both Miller and Amann clearly

disclose techniques relating to apparatus involving continual rotation in the same direction. In particular, Miller discloses a method for compensating for torque ripple in pulse width modulated machines (e.g., see the Abstract in Miller), where torque ripple refers to **cyclical** variation of generated torque caused by the product of motor angular velocity and number of commutation segments. Similarly, Amann discloses a method for damping **torque oscillations** of a drive train of an electrically driven road vehicle (e.g., see the Abstract in Amann). Furthermore, it is unclear how one could modify either Miller or Amann to provide a motor control signal to move a load to a desired position, as recited in claim 1, since the Miller and Amann techniques involve continual rotation in the same direction.

For the reasons stated above, claim 1 patentably distinguishes over the cited references. Accordingly, the rejection of claim 1 under 35 U.S.C. §103(a) should be withdrawn, and claim 1 is in allowable condition.

Because claims 2-5 and 18-19 depend from and further limit claim 1, claims 2-5 and 18-19 are in allowable condition for at least the same reasons.

Claim 20

Claim 20 is directed to a method of providing damping to disturbances to the position of a load in a load moving system. The method includes the steps of moving a load with an electric motor, sensing an indicator of load movement and feeding back a feedback signal indicative of the sensed indicator, and controlling the electric motor by providing a motor control signal to move the load to a desired position based on the feedback signal, whereby disturbances to the position of the load are damped.

The cited references do not teach or suggest, either alone or in combination, a method of providing damping to disturbances to the position of a load in a load moving system which involves providing a motor control signal to move the load to a desired position, as recited in claim 20. Rather, as explained above in connection with claim 1, both Miller and Amann disclose techniques

relating to apparatus with continual rotation in the same direction. Moreover, it is unclear how one could modify either Miller or Amann to provide a motor control signal to move a load to a desired position, as recited in claim 20, since the Miller and Amann techniques involve continual rotation in the same direction.

Since claim 20 patentably distinguishes over the cited references for at least the same reasons as claim 1, the rejection under 35 U.S.C. §103(a) should be withdrawn. Thus, claim 20 is in allowable condition.

Claims 22-23

Claim 22 is directed to a damped system for moving a load. The damped system includes an electromagnetic actuator, a mechanical connection between the electromagnetic actuator and the load, a controller connected to the electromagnetic actuator and providing a motor control signal to move the load to a desired position, and a damping mechanism electrically responsive to an indicator related to force or torque oscillations of the load from the desired position in response to disturbances to the position of the load.

The cited references do not teach or suggest, either alone or in combination, a damped system for moving a load which includes a controller connected to an electromagnetic actuator and providing a motor control signal to move the load to a desired position, as recited in claim 22. Rather, as explained above in connection with claim 1, both Miller and Amann disclose techniques relating to apparatus with continual rotation in the same direction. Additionally, it is unclear how one could modify either Miller or Amann to provide a motor control signal to move a load to a desired position, as recited in claim 22, since the Miller and Amann techniques involve continual rotation in the same direction.

Since claim 22 patentably distinguishes over the cited references for at least the same reasons as claim 1, the rejection under 35 U.S.C. §103(a) should be withdrawn. Therefore, claim 22 is in allowable condition.

Because claim 23 depends from and further limits claim 22, claim 23 is in allowable condition for at least the same reasons.

Newly Added Claims

Claims 25-27 have been added and are believed to be in allowable condition. Claim 25 depends from claim 1. Claim 26 depends from claim 20. Claim 27 depends from claim 22. Support for claims 25-27 is provided within the Specification, for example, on page 7, line 22 through page 8, line 19. No new matter has been added.

Conclusion

In view of the foregoing remarks, this Application should be in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after this Response, that the Application is not in condition for allowance, the Examiner is respectfully requested to call the Applicants' Representative at the number below.

Applicants hereby petition for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned collect at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,

David E. Huang, Esq.
Attorney for Applicant(s)
Registration No.: 39,229
CHAPIN & HUANG, L.L.C.
Westborough Office Park
1700 West Park Drive
Westborough, Massachusetts 01581
Telephone: (508) 366-9600
Facsimile: (508) 616-9805

Attorney Docket No.: TXT04-12

Dated: June 23, 2005